

(Amendment under PCT Article 34 filed on March 22, 2006)

## CLAIMS

1. (currently amended) A conductive adhesive comprising metal powder  
5 as a conductive medium and only a one-component epoxy thermosetting  
resin composition as a binder resin component, wherein  
the metal powder is silver powder or mixed metal powder comprising  
silver powder mixed with a small quantity of other metal powder,  
wherein the ratio of the silver powder to the entire metal powder is  
10 selected to be at least within the range of 70% or more in a volume ratio,  
said one-component epoxy thermosetting resin composition is a  
composition comprising only epoxy thermosetting resin as a resin component  
therefor, which composition is a liquid composition comprising, as essential  
components:
- 15 (a) an epoxy resin component containing at least a multifunctional epoxy  
compound having a polycyclic aromatic ring skeleton as a main component  
therein, and  
(b) a cyclic acid anhydride having an acid anhydride moiety constituting a  
ring structure in the molecule as a curing agent,  
20 in a ratio of 0.7 to 1.1 equivalents of the cyclic acid anhydride of the  
curing agent (b) with respect to the epoxy equivalent of the epoxy resin  
component (a),  
the adhesive is a dispersion in which the metal powder is dispersed in  
said one-component epoxy thermosetting resin composition with a content  
25 ratio of the metal powder to the binder resin component (metal:resin volume  
ratio) being selected within a range between 34:66 and 55:35,

wherein said cyclic acid anhydride having an acid anhydride moiety constituting a ring structure in the molecule is a cyclic acid anhydride having another hydrocarbon ring skeleton fused with the ring structure constituted by the acid anhydride moiety, in which

5        said another hydrocarbon ring skeleton that is fused with the ring structure constituted by the acid anhydride moiety is a structure in which two or more chain-like hydrocarbon groups are substituted on the ring, or a polycyclic structure having cross-link chains on the ring, and

10        the total number of carbon atoms composing the structure of said another hydrocarbon ring skeleton including the chain-type hydrocarbon groups is 8 or more.

2.        The conductive adhesive as claimed in claim 1, characterized in that said one-component epoxy thermosetting resin composition is added with a coupling agent as an adherence imparting agent.

15        3.        The conductive adhesive as claimed in claim 1 or 2, characterized by comprising

at least a bifunctional epoxy compound containing a naphthalene skeleton

20        as one of said multifunctional epoxy compounds having a polycyclic aromatic ring skeleton that is a main component of the epoxy resin component (a).

4. (previously amended)    The conductive adhesive as claimed in claim 1, characterized by comprising

25        at least dihydroxynaphthalene diglycidylether as said bifunctional epoxy compound containing a naphthalene skeleton.

5. The conductive adhesive as claimed in any one of claims 1 to 4, characterized in that said one-component epoxy thermosetting resin composition further comprising;

(c) a cure accelerator having a function to accelerate heat curing reaction  
5 by the cyclic acid anhydride of the curing agent (b), and  
the amount of the cure accelerator (c) to be added thereto is selected to be within the range of a catalytic quantity to the epoxy resin component (a).

6. (currently amended) The conductive adhesive as claimed in any one of  
10 claims 1 to 5, characterized in that said cyclic acid anhydride of the curing agent (b) is a cyclic acid anhydride in which

the ring structure constituted by said acid anhydride moiety is a 5-member or 6-member ring, and

another hydrocarbon ring skeleton is condensed with the ring structure  
15 constituted by the acid anhydride moiety; and

said another hydrocarbon ring skeleton that is fused with the ring structure constituted by the acid anhydride moiety is a structure in which two or more chain-like hydrocarbon groups are substituted on the ring, or a polycyclic structure having cross-link chains on the ring,

20 wherein the total number of carbon atoms composing the structure of said another hydrocarbon ring skeleton including the chain-type hydrocarbon groups is 8 or more.

7. The conductive adhesive as claimed in any one of claims 1 to 6, characterized in that

25 said epoxy resin component (a) comprises a multifunctional epoxy compound having another ring structure in the skeleton, in addition to the

multifunctional epoxy compound having a polycyclic aromatic ring skeleton,  
which is the main component thereof, and

the blending ratio of the multifunctional epoxy compound having the  
another ring structure in the skeleton to 100 parts by mass of the

5 multifunctional epoxy compound having the polycyclic aromatic ring skeleton  
is selected to be within the range between 5 and 50 parts by mass.

8. The conductive adhesive as claimed in any one of claims 2 to 7,  
characterized by further comprising a silane coupling agent as said coupling  
agent.

10 9. (currently amended) The conductive adhesive as claimed in any one of  
claims 1 to 8, characterized in that the metal powder is silver powder or  
mixed metal powder formed by mixing a small quantity of other metal powder  
to silver powder, and the ratio of the silver powder to the entire metal powder  
is selected to be at least within the range of 90% or more in a volume ratio.

15 10. (currently amended) The conductive adhesive as claimed in any one of  
claims 1 to 9, characterized in that in the case that said metal powder is  
mixed metal powder comprising silver powder mixed with a small quantity of  
other metal powder,

said other metal powder that is mixed with silver powder is chosen  
20 from copper powder or zinc powder.

11. (previously presented) The conductive adhesive as claimed in any one of  
claims 1 to 10, characterized in that in said one-component epoxy  
thermosetting resin composition,

in addition to the multifunctional epoxy compound having a polycyclic  
25 aromatic ring skeleton, which is a major component therein, said epoxy resin